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Kränzlin (*ibid.* 97, 98) has described 2 new species of orchids from the Philippine Islands.—G. Kükenthal (*ibid.* 7, 8) under the heading "Cyperaceae novae I" describes new species and varieties in the genus *Carex*, some of which are from America.—K. Krause (Bot. Jahrb. **44**: Beibl. 101, pp. 9–14. 1910) has published several new species of Araceae from South America and the Philippine Islands.—Th. Loesener (*ibid.* **44**:156–197) gives a synoptical revision of the genus *Salacia*, recognizing 64 species, of which 25 are new to science.—W. Moeser (*ibid.* 239–345) characterizes the different natural groups of species in the genus *Helichrysum*, accompanying the same by determinative keys, and adding about 30 species and several varieties new to science.—R. Pilger (*ibid.* Beibl. 101, p. 7) has published a new species of *Valeriana* from southern Brazil.—J. W. Palibine (Bull. Soc. Bot. Genève II. **2**:17–21. 1910) presents an article on the subsection Baicalia of the genus *Oxytropis*, describing one new species and transferring *Arogallus Bellii* Greene to *Oxytropis*.—F. Pax (Rep. Nov. Sp. **8**:161, 162. 1910) has published 4 new species of Euphorbiaceae from Brazil and Mexico.—H. E. Petersen (Bot. Tidssk. **29**:345–429. 1909) under the title "Studier over Ferskvands-Phykomyceter" describes several new species and proposes one new genus (*Pythiomorpha*) from Denmark.—A. Pulle (Recueil Trav. Bot. Néerl. **6**:251–293. 1909) in continuation of his studies on the flora of Surinam publishes a second article including 18 new species of flowering plants.—C. B. Robinson (Phil. Journ. Sci. Bot. **4**:687–698. 1909) gives a synoptical treatment of the Philippine Boraginaceae, recognizing 10 genera to which are referred 21 species.—P. A. Rydberg (Bull. Torr. Bot. Club **37**:127–148. 1910) under "Studies on the Rocky Mountain flora XXI" describes 27 new species and makes several new combinations in the Compositae.—F. J. Seaver (Mycologia **2**:48–92. *pls. 20, 21.* 1910) continues his monographic treatment of the Hypocreales of North America, publishes several new species, and proposes two new genera (*Chromocrea* and *Chromocreopsis*).—H. and P. Sydow (Ann. Mycol. **8**:36–41. 1910) have published 22 new species of fungi from the Philippine Islands.—W. Tranzschel (*ibid.* 1–35) in an article entitled "Die auf der Gattung Euphorbia auftretenden autöcischen Uromyces-Arten" has published several new species of fungi parasitic on different American euphorbias.—P. Wilson (Bull. Torr. Bot. Club **37**:85, 86. 1910) describes a new species of *Amyris* from Mexico and publishes several new combinations in the genus *Zanthoxylum*.—E. O. Wooton (*ibid.* 31–41) in an article entitled "The larkspurs of New Mexico" recognizes 12 species for the state, 5 of which are described as new; a key to the species accompanies the descriptive matter.—Different authors (Kew Bull. 55–60. 1910) under the title "Diagnoses Africanae XXXIV" have published several new species and described a new genus (*Megabaria*) of the Euphorbiaceae.—J. M. Greenman.

Respiration.—Kuijper[7] has studied the effect of various temperatures on the amount of CO_2 produced by the seedlings of *Lupinus luteus*, *Pisum sativum*, and *Triticum vulgare*, with the view of testing the applicability of the ideas set forth in BLACKMAN'S[8] "optima and limiting factors" to the process of respiration. In general the experiments were run six hours, and the CO_2 production determined for each hour. Up to 10° the CO_2 produced per hour was constant for the six hours. At higher temperatures, up to 20°, there was a rise for four or five hours. This rise is hard to explain in the light of the facts that the seeds were germinated at approximately 20°, that it occurred regardless of the age of the seedlings, and that it was followed by a corresponding fall. At constant temperatures above this, up to 40°, a fluctuation in CO_2 production was apparent. Especially between 30° and 40° this manifested itself by a rapid fall for the first two hours, followed by a later rise ranging over one to two hours, followed by a later continuous fall. The author assumes that two distinct processes are differently affected by the continuous high temperature: one early depressed, marking the fall; the other later stimulated, showing the rise. This fact he suggests may be related to the double nature of CO_2 production in respiration noted by PALLADIN, in which he assumes the action of oxidase on the one hand and of carbonase on the other. At still higher temperatures there is a continual fall in CO_2 production. The temperature at which one type of behavior changes to another is determined by the nature of the stored food, as the following tables show:

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[7] Kuijper, J., Ueber den Einfluss der Temperatur auf die Atmung der höheren Pflanzen. Extrait Rec. Trav. Bot. Néerland. **7**: pp. 109. *pls. 3.* 1910.

	Lupinus	Pisum	Triticum
Rise noticeable	15–20°	20–25°	30°
Fluctuation	20–25°	30°	35°
Continual falling	25°	35°	40°
Protein	37%	22%	12%
Starch	none	54%	74%

The VAN'T HOFF law applies for *Pisum* and *Triticum* from 0°–20°, and for *Lupinus* up to 25°. The coefficient for a temperature difference of 10° lies between 2 and 3. The continual falling in CO_2 production with continual exposures at higher temperatures agrees with BLACKMAN'S results. BLACKMAN found that in photosynthesis the initial rate at any given high temperature (30–40°) could be figured in two ways, giving agreeing results: by applying the VAN'T HOFF coefficient to the measurements at lower temperatures where the rate is constant, or by taking several later determinations at the given temperatures and from these extrapolating the initial value. KUIJPER finds that these methods will not apply to the CO_2 yield in respiration, because of the appearance of the two antagonistic factors at temperatures between 30° and 40°, and because of the non-application of the VAN'T HOFF law at the higher temperatures.—WILLIAM CROCKER.

Permeability.—CZAPEK[9] has published a preliminary article upon the effect of various reagents upon the precipitation of tannins in plant cells by means of caffein and ammonium carbonate. If slices from the epidermis of *Echeveria*

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[8] BLACKMAN, F. F., Annals of Botany **19**:281–295. 1905.

[9] CZAPEK, F., Versuchs über Exosmose aus Pflanzenzellen. Ber. Deutsch. Bot. Gesell. **28**:159–169. 1910.